WHAT IS CLAIMED IS:

1. An optical router, characterized in that the router comprises two optical couplers (21, 22) which are serially interconnected via delay device and wherein the optical router further comprises an optical amplifier (9) optically connected to one of the optical couplers (21, 22).

2. An optical router according to Claim 1, characterized in that the delay device (23) comprises a difference in distance $\Delta L$ between the two optical guides which connect the two couplers (21, 22).

3. An optical router according to Claim 1 or characterized in that the couplers (21, 22) are 3 dB couplers.

4. An optical router according to Claims 1-3, characterized in that the delay device is formed by one or more pairs of electrodes arranged along the optical path.

5. An optical router according to Claim 3, characterized in that the delay element is additionally provided with one or more pairs of electrodes arranged along the optical path in the delay element to achieve a supplementary time delay.

6. An optical router according to Claim 2, characterized in that

$$\Delta L = \lambda^2 / (2\Delta\lambda n),$$

where λ indicates the optical wavelength used, n is the refractive index, and Δλ indicates the half-period of the power transfer function in each direction, i.e. ½FSR (FSR = free spectral range).

7. An optical router according to Claims 1-6, characterized in that the router is made in an integrated design.

8. A method of monodirectional amplification of bidirectional optical signals with given wavelengths $\lambda_{li}$ and $\lambda_{rj}$ in an optical guide (3) by means of an optical router according to claims 1 to 7 having a first bidirectional port (A) and a second bidirectional port (D) and a first unidirectional port (B) and a second unidirectional port (C), characterized in that the optical signals in each direction toward the router are fed to the first bidirectional port (A) and the second bidirectional port (D), respectively, of the router, and from there to the first unidirectional port (B) of the router, further through an optical amplifier (9) connected to the unidirectional ports and from there through the second unidirectional port (C) of the router and back through the router to the second bidirectional port (D) and the first bidirectional port (A), respectively.

9. A method according to Claim 8, characterized in that $\lambda_{r1}$ and $\lambda_{r2}$ are allocated on the power transfer function of the router in one transmission direction on each side of a maximum of $\lambda_R$, and that $\lambda_{l1}$ and $\lambda_{l2}$ are allocated on the power transfer function of the router in the other transmission direction on each side of a maximum of $\lambda_L$, said bidirectional optical signals having the wavelengths $\lambda_{l1}$ and $\lambda_{l2}$ in one direction and having the wavelengths $\lambda_{R1}$ and $\lambda_{R2}$ in the other direction, and said $\lambda_L$ and $\lambda_R$ indicating a maximum in a specific frequency band for the power transfer function of the router in one direction and the power transfer function of the router in the other direction, respectively.